REMARKS

Claims 1-46 are pending. Claims 1, 2, 7, 15, 19, 23, 28, 33, 34 and 39 have been amended as described below. Reconsideration is respectfully requested in light of these amendments and the remarks that follow.

With respect to the art rejections, claims 1, 4, 5, 15-17, 23-25, 27, 33, 36 and 37 have been rejected under 35 U.S.C. § 103(a) based on U.S. patent 5,583,410 to *Jacobson et al. (Jacobson)*. Claims 6-14, 18-22, 26, 28-32 and 38-46 stand rejected under 35 U.S.C. § 103(a) based on *Jacobson* in view of U.S. patent 5,140,340 to *Stephenson*.

Jacobson is directed to multiplex control of stepper motors. His system employs two DMAs, a first one that loads a sequence of step times from a selected step time table in a first memory into a register of a timer. When equality is detected between the register-loaded step times and the counter, a trigger signal is generated by the timer which is fed back via an OR gate to the first DMA to cause it to access the next address in the step time table. The trigger signal is also input to the second DMA to initiate the transfer of successive pairs excitation patterns from a step table in a second memory to an input buffer and to cause the input buffer's current contents to be transferred to an output buffer that communicates the motors' current drivers. Each time the trigger signal is generated the counter is reset begins counting again.

However, *Jacobson* does not disclose nor teach an arrangement in which the second DMA is configured to output to the first DMA a start signal, after the second DMA completes the sending of control data corresponding to first timing data to the drive controller, to cause the first DMA to start reading second timing data. This feature, which was previously contained in claim 2, is now recited in independent claim 1. A similar feature (recited in means language) previously contained in claim 34 is now recited in independent claim 33. Claims 2 and 34 have been amended to reflect the changes made to their respective independent claims.

Similar to the amendments made to claims 1 and 33, independent method claim 15 and independent machine-readable storage medium claim 23 have also

been amended to recite that a start signal is output after one control data type is completely sent to the drive mechanism controller, and that the reading of next timing data is performed in response to the start signal. *Jacobson* does not disclose nor teach this control sequence.

Sequential reading of timing data and sending of corresponding control data in which a start signal, output by the direct memory access (means) after control data corresponding to previous timing data is completely sent, triggers the reading of next control data is also contained in each of independent apparatus claims 7 and 39. Each of independent claims 19 and 28 has been similarly amended. Each of those claims now recite a start signal is output to start the reading of next timing data after completing the sending of control data corresponding to previous timing data to the drive mechanism controller. As discussed above, *Jacobson* does not disclose nor teach such a control sequence, nor does *Stephenson*, which is directed a technique for compensating for dislocation of the printing media during printing but which does not employ DMA technology nor the specific control sequence claimed by applicants.

The remaining references do not offset the shortcomings of *Jacobson* and *Stephenson*.

Applicant acknowledges with appreciation the indication that claims 2, 3, 34 and 35 contain allowable subject matter. In view of the amendments made herein and for the reasons discussed above, these claims have not been rewritten in independent form at this time.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration of the present application.

Respectfully submitted,

Michael T. Gabrik

Michael T. Gabrik
Registration No. 32,896

Please address all correspondence to:

Epson Research and Development, Inc.
Intellectual Property Department
150 River Oaks Parkway, Suite 225
San Jose, CA 95134
Phone: (408) 952-6000
Facsimile: (408) 954-9058
Customer No. 20178

Date: July 14, 2004